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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,713	08/04/2003	Antonio J. Montalvo	2550/183	5691
2101 7590 04/30/2007 BROMBERG & SUNSTEIN LLP 125 SUMMER STREET BOSTON, MA 02110-1618			EXAMINER PHAM, TUAN	
			ART UNIT 2618	PAPER NUMBER
			MAIL DATE 04/30/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/633,713

**Applicant(s)**

MONTALVO, ANTONIO J.

**Examiner**

TUAN A. PHAM

**Art Unit**

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see Applicant's remark, filed on 02/16/2007, with respect to the rejection(s) of claim(s) 1-24 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of *Bandeira et al.* (US Pub. No.: 2002/0072329).

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-4, 7-10, 13-16, and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khan et al. (U.S. Patent No.: 5,959,499, hereinafter, "Khan") in view of Strakovsky (U.S. Patent No.: 5,678,209) and further in view of Bandeira et al. (US Pub. No.: 2002/0072329, hereinafter, "Bandeira").**

**Regarding claims 1, 7, 13, and 19,** Khan teaches a method and a radio transmission power control circuit comprising (see figure 1):

a radio frequency quadrature downconverter (see figure 1, quadrature downconverter 25) that produces a quadrature downconverter output (see output 26, and output 27) having a frequency equal to the frequency difference between a first quadrature downconverter input (see figure 1, input at coupler 112 to downconverter 25)

based on a transmitted signal of a radio transmitter (see figure 1, TX side at power amplifier 17) and a second quadrature downconverter input based on a local oscillator signal (see figure 1, second input from LO 28, col.2, ln.35-67); and

a receiver baseband circuit that processes the downconverter output to produce a power signal representative of the transmitted signal (see figure 1, col.2, ln.35-67).

It should be noticed that Khan fails to teach a feedback control circuit that produces a transmitter gain control signal to control transmitted signal power so as to minimize the difference between the power signal and a power reference signal. However, Strakovsky teaches such features (see figure 1, level controller 18, reference signal 22, col.1, ln.29-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Strakovsky into view of Khan in order to produce a transmitter with improved linearity while maintaining immunity to instability during normal operation as suggested by Khan at col.2, ln.18-25.

Khan and Strakovsky, in combination, fail to teach a receiver baseband circuit of a half duplex radio transceiver that alternately transmits and receives radio signals, the receiver baseband circuit operating when receiving to process received radio signal and transmitted. However, Bandeira teaches such features (see figure 6, [0075-0082]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Bandeira into view of Khan and Strakovsky in order to save power for the device.

**Regarding claims 2, 8, 14, and 20**, Khan further teaches the radio transmitter is part of the local oscillator signal is used by the radio transmitter such that the transmitted signal has a frequency determined by the local oscillator signal (see figure 1, col.2, ln.35-67, LO 22).

**Regarding claims 3, 9, 15, and 21**, after combine, Khan further teaches an analog-to-digital converter that converts the power signal to a representative digital power signal (see figure 1, ADC 33); and Strakovsky further teaches the feedback control circuit produces the transmitter gain control signal so as to minimize the difference between the digital power signal and the power reference signal (see figure 1, level controller 18, reference signal 22, col.1, ln.29-37).

**Regarding claims 4, 10, 16, and 22**, Khan further teaches the first quadrature downconverter input is developed by a directional coupler that senses the transmitted signal (see figure 1, coupler 18, quadrature downconverter 25, col.2, ln.35-67).

**4. Claims 5-6, 11-12, 17-18, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khan et al. (U.S. Patent No.: 5,959,499, hereinafter, "Khan") in view of Strakovsky (U.S. Patent No.: 5,678,209) and further in view of Bandeira et al. (US Pub. No.: 2002/0072329, hereinafter, "Bandeira") as applied to claims 1, 7, 13, and 19 above, and further in view of Haartsen (Pub. No.: U.S. 2005/0048985).**

**Regarding claims 5, 11, 17, and 23**, Khan and Strakovsky, in combination, fails to teach WLAN transceiver. However, Haartsen teaches such feature (see claim 9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Haartsen into view of Khan and Strakovsky in order to communicate between the two device.

**Regarding claims 6, 12, 18, and 24**, Haartsen further teaches time division duplex (see [0011]).

### Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A. Pham whose telephone number is (571) 272-8097. The examiner can normally be reached on Monday through Friday, 8:30 AM-5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2618  
April 25, 2007  
Examiner

Tuan Pham

Supervisory Patent Examiner  
Technology Center 2600

Matthew Anderson